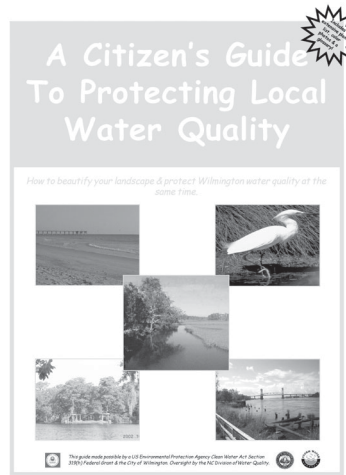


New Website Provides Valuable Storm Water Information

<http://www.ci.wilmington.nc.us/pubservices/stormwater/stormwater.htm>

Storm Water Services has a new website! You can view a variety of storm water information by visiting the website address listed above. Here is a brief listing of information you may find on the site:

- ◆ Storm Water Overview
- ◆ Capital Projects
- ◆ Maintenance Activities
- ◆ Storm Water Fee Information
- ◆ Publications and Reports including:
 - ◆ UNCW Water Quality Monitoring Reports
 - ◆ Pollution Fact Sheets
 - ◆ Storm Water Watch Newsletters
 - ◆ Citizen's Guide to Protecting Local Water Quality
 - ◆ Greenfield Lake Initiative Report
- ◆ Outreach & Education Information including:
 - ◆ Enviroscape School Programs
 - ◆ What is a Watershed?
 - ◆ Keep It Clean! Campaign
 - ◆ Best Management Practices (BMPs)
 - ◆ EPA 319 Grant
 - ◆ Storm Water Glossary



PUBLIC SERVICES

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STORM WATER SERVICES

343-4777

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Administrative Support

STORM WATER OPERATIONS

341-4646

Harvey London
Drainage Manager

BILLING & COLLECTIONS

341-7806



In-house Drainage Improvement Projects, FY 02-03



5400 block Eastwind Rd

*

718 Windemere Rd

*

4205 Red Bird Rd

*

4000 block Appleton Way

*

4900 and 6200 block Park Avenue

*

378 and 402 RL Honeycutt Drive

*

R.L. Honeycutt and Burney Drive

*

Legion Stadium

*

200 block Wallace Ave

*

Shinnwood and Green Arbor Lane

*

6209 Teal St

*

Optimist Park

*

322 N. Hampton Dr

*

Gleason Rd

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STORM WATER WATCH

ANNUAL REPORT

Fall 2003

A Publication of the City of Wilmington's Storm Water Services

WALLACE AVENUE DRAINAGE IMPROVEMENTS



The City of Wilmington Public Services Department often performs in-house projects that improve or repair drainage and City infrastructure. These projects require detailed analysis of the problem, careful planning to determine appropriate solutions, and coordination between City departments and utility companies.

One such improvement project was performed by the Storm Water Services Division in January of 2003 in the vicinity of Wallace Avenue from Peachtree to Park Avenue. This area is located in the Hewletts Creek Watershed which eventually sheds runoff into the Intracoastal Waterway. The existing storm drainage infrastructure was too small to handle the volume of runoff it was receiving and often resulted in flooding that affected nearby streets and property. There were even times when the water would rise so high, that large floatable objects would block storm drains and restrict water from flowing into the drains and pipes.

After speaking with several concerned citizens in the area, site visits were conducted to identify the most feasible solution for installing new drainage infrastructure. Survey information revealed water, gas, and telephone lines on the west side of Wallace Avenue, sanitary sewer lines on the east side, and a cluster of intersecting utility lines at the intersection of Park and Wallace Avenue. Therefore, it was determined that a new storm water pipe would be installed under the travel lane along the east side of Wallace Avenue. This was the most feasible solution to minimize interference with existing infrastructure and allow local traffic access during construction activities.

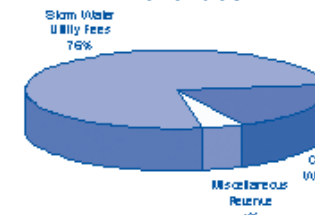
A 24" reinforced concrete pipe was installed at a depth up to 11 feet on Wallace Avenue from Park Avenue to Peachtree Avenue. New lateral pipes and storm drain curb inlet structures were also installed. The new curb inlets are designed to allow the drainage system to function even when trash and debris clog the grates.

During the project, the smaller, existing pipe had to remain functional during construction in order to provide an outlet for runoff when rain events occurred. When the new system became functional, the old 15" line was sealed in place. Removal of sidewalk and curbing was also necessary at Wallace and Park Avenues. Storm water crews poured the concrete curbing transitions at the storm drain structures and landscaped any disturbed area. Finally, the Streets Division of Public Services repaired and replaced the pavement that was removed during construction of the project.

The Wallace Avenue improvements are a shining example of a successful project completed by City personnel. Street and property flooding was alleviated, new infrastructure replaced inadequate infrastructure, and overall drainage improved in the area.

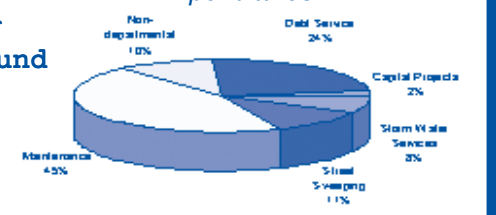


Revenues



Storm Water Management Fund FY 02-03

Expenditures

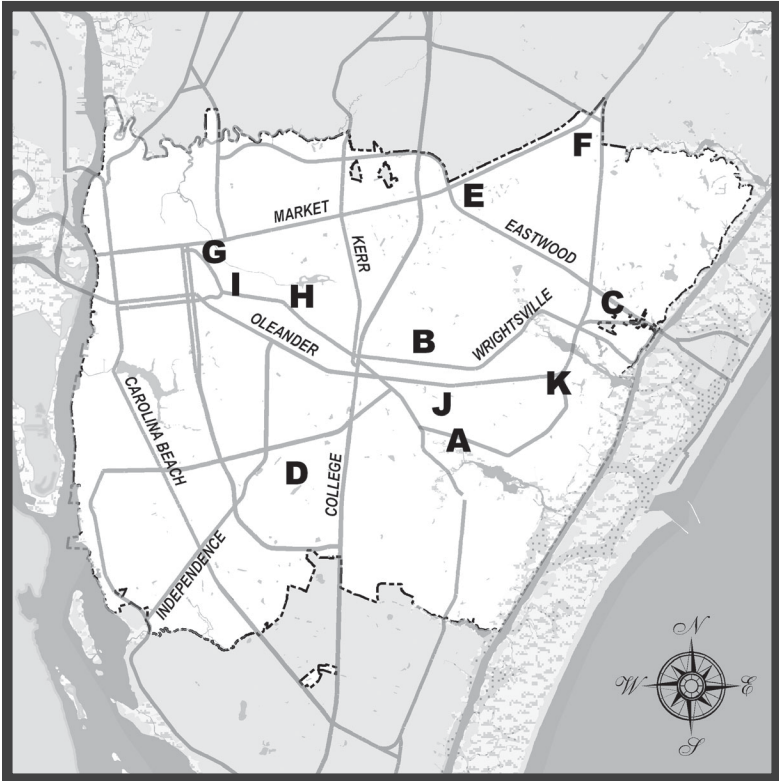


City of Wilmington
Storm Water Services
PO Box 1810
Wilmington, NC 28402-1810
<http://www.ci.wilmington.nc.us/pubservices/stormwater/stormwater.htm>



Storm Water Capital Projects

The Storm Water Utility provides dedicated funding and staff resources for conducting capital projects in the City. Capital projects require detailed analysis of drainage problems and solutions as well as coordination with utilities, other City departments, and citizens who may be affected by a project. The typical storm water capital project process is shown below:



Storm Water Services
Capital Projects
Improving Drainage and Water Quality

Project	Budget
A Greenville Loop Bridge	\$ 566,000
B Heidi Drive	\$ 269,000
C Lions Gate/Plaza East	\$ 642,000
D Longstreet	\$ 3,049,000
E Market St./Inland Greens	\$ 500,000
F Market St./Northwoods Drive	\$ 525,000
G Market St. Relief/Wetland	\$ 774,000
H Marsdens Branch	\$ 317,000
I Mineral Springs	\$ 245,000
J Rileys Branch	\$ 1,588,000
K Seagate	\$ 378,000

Storm Water Utility Maintenance Comparisons

FY 98-99 thru 02-03

Maintenance Description	Unit	FY 98/99	FY 99/00*	FY 00/01	FY 01/02	FY 02/03
Clean Structures	Each	11,990	12,143	9,069	6,922	12,919
Clean Lines	Linear ft.	336,716	406,966	260,231	315,716	241,167
Cave-in Repair	Each	235	470	497	314	294
Structure Repair	Each	105	70	121	118	116
Construct Structures	Each	32	4	42	39	26
Reset Structure Covers	Each	322	238	198	289	227
Replace Structure covers	Each	162	198	192	174	182
Ditch Cleaning (hand)	Linear ft.	178,674	2,557,692	307,554	470,683	346,282
Slope Mowing	Linear ft.	938,379	859,788	502,642	564,023	450,866
Right-of-Way Mowing	Acres	147	123	175	181	159
Culvert Cleaning	Each	383	632	162	757	1,471
Sweep Streets	Miles	9,157	11,400	13,310	15,685	13,337
Street Sweeping Disposal	Truckloads	409	545	773	886	888

*Significant increases or decreases in maintenance activities from year-to-year are due to hurricane clean-up activities, differences in rainfall amounts, and storm event response activities.

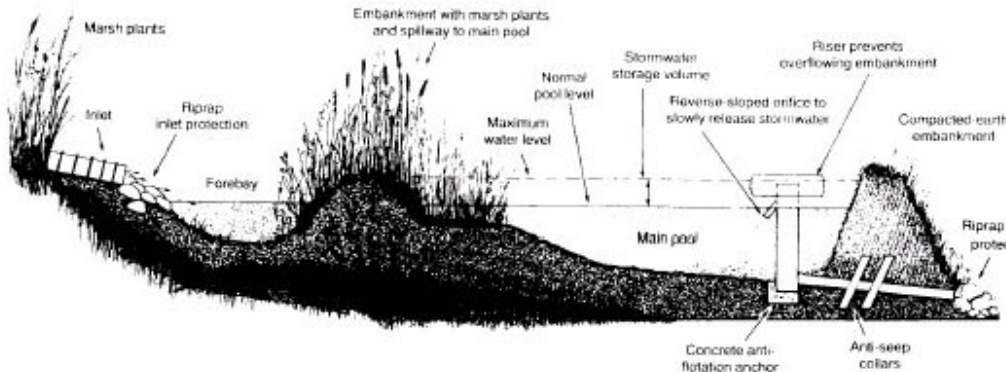
Wet Detention Ponds (a.k.a Retention Ponds)

Submitted by Jim Quinn, Senior Engineering Technician

If you’ve driven through Wilmington on your daily commute, you’ve probably noticed ponds adjacent to shopping centers, apartment complexes and homeowner communities. While you may recognize these as storm water detention ponds, have you ever wondered how they actually function? Wet detention ponds, also known as retention ponds, are storm water control structures providing both water retention and removal of pollutants from storm water runoff. The purpose of these ponds is basically twofold: 1) to temporarily store runoff from a specific area; and 2) to provide water quality protection to downgradient receiving waterbodies such as the Intracoastal Waterway and the Cape Fear River.

A wet detention pond is designed to hold runoff from a specific-sized storm event. By capturing and retaining runoff during storm events, wet detention ponds control both storm water quantity and quality. The water that flows across a site is collected in a detention pond and is temporarily stored and slowly released over a 2-5 day period. By temporarily storing this water, the impact of flooding to downgradient properties is minimized. In addition, sediment and pollutants are allowed to settle out before reaching larger receiving water bodies. The pond’s natural physical, biological, and chemical processes work to remove pollutants.

Imagine if no detention facilities existed within New Hanover County. Rainfall events both large and small would carry storm water runoff directly into the public drainage system without detaining it. The public system would be inundated frequently and downgradient properties and roadways would be subjected to constant flooding. Receiving bodies such as the tidal creeks, Intracoastal Waterway, and the Cape Fear River would be subjected to increased sedimentation and pollutants which would have a devastating effect on aquatic life and habitat.



Wet Retention Pond – Side Cutaway View (Source: Arnold, et al. 1993)



Pond Maintenance: Property Owner Responsibility

As the owner or responsible party of a wet detention pond, are you aware of your maintenance responsibilities? If not, then there are things you should do to ensure your pond functions properly and that you remain in compliance with the conditions of your permit. To make sure that detention facilities throughout the City function properly, the City conducts an inspection program twice a year. Approximately 250 ponds are inspected in the spring and winter months for compliance with City Standards. The table to the right illustrates necessary pond maintenance activities.

Pond Maintenance Checklist

Inspect Frequently

Inspect the pond for:

- ☐ Obstructed inlet and outlet structures
- ☐ Erosion of slopes and banks
- ☐ Sediment accumulation in forebay and pond
- ☐ Stability of sideslopes
- ☐ Condition of spillway
- ☐ Condition of pipes and pond structures
- ☐ Vegetation in and around pond
- ☐ Up and downstream channel conditions

Vegetation Management

- ☐ Maintain slope vegetation
- ☐ Stabilize slopes with vegetation (reseed or resod)
- ☐ Cut back excessive aquatic weed growth

Debris/Litter Control

- ☐ Clean trash and debris from inlet and outlet structures
- ☐ Remove sediment accumulation